

What is claimed is:

1. A network gateway, comprising:

an identification database including one or more mobile unit entries, where each  
5 mobile unit entry indicates a subscriber information database storing subscriber  
information for the mobile unit corresponding to the mobile unit entry;

a subscriber information database including one or more subscriber entries, where  
each subscriber entry indicates for a corresponding mobile unit a location, a status, and  
any services subscribed to by the corresponding mobile unit;

10 an identifier table including an identifier entry for each subscriber entry in the  
subscriber information database, where each identifier entry indicates a correspondence  
between a first identifier and a second identifier;

a primary network connection connected to a first wireless network, where the  
first wireless network is a packet switched network; and

15 a secondary network connection connected to second wireless network.

2. The network gateway of claim 1, where the second wireless network is a wireless  
circuit switched network and the secondary network connection is an SS7  
connection.

20 3. The network gateway of claim 1, further comprising a visitor information  
database including one or more visitor entries, where each visitor entry indicates  
for a corresponding visiting mobile unit a location, a status, and any services  
subscribed to by the corresponding visiting mobile unit.

25 4. The network gateway of claim 1, where the location in a subscriber entry  
indicates the wireless network where the corresponding mobile unit is currently  
registered.

30 5. The network gateway of claim 1, where the first identifier is a telephone number.

U.S. PATENT & TRADEMARK OFFICE

6. The network gateway of claim 1, the second identifier is an IP address.
7. The network gateway of claim 1, where each identifier entry further indicates a correspondence among the first identifier, the second identifier, and a third identifier.
8. The network gateway of claim 7, where the third identifier is a mobile identification number.
9. The network gateway of claim 1, further comprising an exchange switch connected to a public switched telephone network.
10. A method of providing subscriber information for a mobile unit subscribed to a primary network roaming in a secondary network, comprising:
  - receiving a request at a gateway in a primary network for subscriber information for a mobile unit from a secondary network, where the request includes a first identifier indicating the mobile unit;
  - converting the first identifier to a second identifier;
  - retrieving subscriber information using the second identifier; and
  - providing a response from the gateway to the secondary network, where the response includes the retrieved subscriber information and the first identifier.
11. The method of claim 10, where the first identifier is a telephone number.
12. The method of claim 10, where the second identifier is an IP address.
13. The method of claim 10, where the request is to register the mobile unit in the secondary network.
14. The method of claim 10, where the primary network is a wireless packet switched network.

15. A method of sending data from a mobile unit through a wireless circuit switched network, comprising:

receiving data from a mobile unit at a base station in a wireless circuit switched network, where the data indicates a destination for the data, a requested data transmission service, and an identifier corresponding to the mobile unit, and where the mobile unit is a subscriber in a wireless packet switched network;

sending the data from the base station to a mobile switching center;

retrieving subscriber information corresponding to the identifier from a subscriber information database in the wireless packet switched network, where the subscriber information indicates permitted services for the mobile unit;

comparing the destination and requested data transmission service with the subscriber information;

if the destination is accessible through an external packet switched network connected to the wireless packet switched network, sending the data to the external packet switched network through a router; and

if the destination is accessible through an external circuit switched network connected to the wireless packet switched network, sending the data to the external circuit switched network through an exchange switch.

16. The method of claim 15, where the subscriber information database is in a network gateway.

17. The method of claim 15, where the external packet switched network is the Internet.

18. The method of claim 15, where the external circuit switched network is a public switched telephone network.

19. The method of claim 15, where retrieving subscriber information from the subscriber information database comprises:

5 sending a request from the mobile switching center to the wireless packet switched network including the identifier;

receiving the subscriber information from the wireless packet switched network;  
and

10 storing the subscriber information in a visitor information database in the wireless circuit switched network.

20. The method of claim 19, further comprising converting the identifier from the mobile switching center to an IP address and using the IP address to retrieve the  
10 subscriber information from the subscriber information database.

21. A method of sending data to a mobile unit through a wireless packet switched network and a wireless circuit switched network, comprising:

receiving data from an external network in a wireless packet switched network,

15 where the data includes an identifier corresponding to a mobile unit;

retrieving status information corresponding to the identifier from a subscriber information database, where the status information indicates the mobile unit is registered in a wireless circuit switched network;

20 requesting a temporary local directory number from the wireless circuit switched network;

sending the data and the temporary local directory number to an exchange switch;  
and

25 sending the data from the exchange switch to the wireless circuit switched network using the temporary local directory number.

22. The method of claim 21, where the subscriber information database is in a network gateway.

23. The method of claim 21, where the external network is an external packet  
30 switched network and the data is received at a router.

24. The method of claim 23, where the external packet switched network is the Internet.

25. The method of claim 21, where the external network is an external circuit  
switched network and the data is received at the exchange switch.

26. The method of claim 25 where the external circuit switched network is a public  
switched telephone network.

27. The method of claim 25 where the exchange switch retrieves the status  
information from a network gateway including the subscriber information  
database.

28. A system for providing subscriber information for a mobile unit subscribed to a  
primary network roaming in a secondary network, comprising:  
means for receiving a request at a gateway in a primary network for subscriber  
information for a mobile unit from a secondary network, where the request includes a  
first identifier indicating the mobile unit;  
means for converting the first identifier to a second identifier;  
means for retrieving subscriber information using the second identifier; and  
means for providing a response from the gateway to the secondary network,  
where the response includes the retrieved subscriber information and the first identifier.